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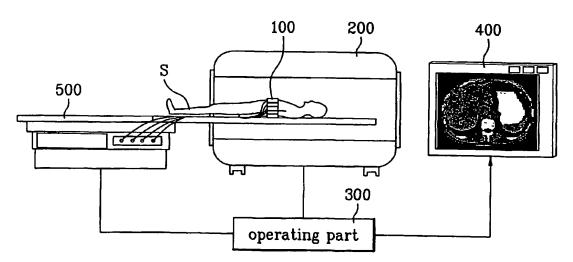
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(54) Title: SYSTEM AND METHOD FOR THREE-DIMENSIONAL VISUALIZATION OF CONDUCTIVITY AND CURRENT DENSITY DISTRIBUTION IN ELECTRICALLY CONDUCTING OBJECT



(57) Abstract: System for visualizing conductivity and current density distributions including a plurality of current injecting devices (100) for injecting currents into a measuring object, an MRI scanner (100) for measuring one directional component of a magnetic flux density due to each of the currents injected into a measuring object, an operating part (300) for controlling the current injecting devices (100) so as to inject currents of different directions into the measuring object, and calculating a conductivity distribution and a current density distribution inside of the measuring object by using the one directional component of a magnetic flux density, and displaying means (400) for visualizing the conductivity and current density distributions calculated by the operating part (300), thereby permitting to visualize the conductivity and the current density of the measuring object more accurately.

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ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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	CUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document, with indication, where appropri	ate, of the relevant passages	Relevant to claim No.		
А	US 6501984 B1 (CHURCH) 31 Dec abstract, claim 1, fig. 2.	cember 2002 (31.12.2002)	1,10		
A	US 5465730 A (ZADEHKOOCHAK) (14.11.1995) abstract, claim 1.	14 November 1995	1,10		
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Furth	ner documents are listed in the continuation of Box C.	See patent family annex.			
<ul><li>Special</li></ul>	categories of cited documents:	"T" later document published after the internation	mal filing data or priority		
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29 April 2004 (29.04.2004)		Date of mailing of the international search report  23 June 2004 (23.06.2004)			
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### INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No. PCT/KR 03/02825-0

	Patent document cited in search report		Publication date	Patent family member(s)			Publication date
US	A	5465730	1995-11-14	WO EP DE DE	A A T D	9302617 0599877 69210247T 69210247D	1993-02-18 1994-06-08 1997-01-02
				JP	Ť	6509256T	1996-05-30 1994-10-20
JS	В	6501984	2002-12-31	CA	A	2272429	1998-06-04
				CA	A	2191285	1998-05-26
				UA	A	5044798	1998-06-22
				WO	A	9823204	1998-06-04